# College of Public Health News

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Georgia Southern University

# Georgia Southern Examines Epithelial Ovarian Cancer Mortality among Hispanic Women

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Over the past half century the proportion of Hispanics in the US population has been steadily increasing, and groups of Hispanic origin have diversified. Despite notable racial and ethnic disparities in ovarian cancer (OC) mortality, population-based studies on OC among Hispanic females are lacking.

The disparities in OC 5 year survival and mortality were examined using log-rank tests and Cox proportional hazards models, adjusted for sociodemographic and pathological characteristics, time of diagnosis, receipt of resection surgery and county socioeconomic status. Trends in 5-year survival rates were examined using joinpoint regression models.

The 5-year survival was lowest in Puerto Ricans (median survival: 33 months; survival rate: 31.07%) and was highest in the “Other” Hispanic subgroup (median survival: 59 months; survival rate: 49.14%) (log-rank test: $P < 0.001$). The OC-specific death hazards in Mexicans ($HR_{adj}$: 0.82, 95%CI: 0.67–1.00, $P = 0.048$), South or Central Americans ($HR_{adj}$: 0.77, 95%CI: 0.62–0.96, $P = 0.005$) and Other Hispanics ($HR_{adj}$: 0.76, 95%CI: 0.63–0.92, $P = 0.038$) were significantly lower than for Puerto Ricans. Mortality rates of Cubans and Puerto Ricans were not significantly different. During 1992–2008, there were non-significant increasing trends in the 5-year all-cause and OC-specific survival rates: from 43.37% to 48.94% (APC = 0.41, $P = 0.40$) and from 48.72% to 53.46% (APC = 0.29, $P = 0.50$), respectively.

OC mortality in Hispanic patients varied by sub-ethnicity. This heterogeneity should be considered in future cancer data collection, reports and research.

“Epithelial ovarian cancer mortality among Hispanic women: Sub-ethnic disparities and survival trend across time: An analysis of SEER 1992–2013,” was recently published in Cancer Epidemiology.

Dr. Chen Chen, alumni, was the lead author, and Dr. Yelena Tarasenko, Department of Epidemiology of Jiann-Ping Hsu College of Public Health Georgia Southern University was a senior author. The study would not be possible without significant contribution and expertise of Drs. Talar Markossian and Abigail Silva. While working on her dissertation on a related topic, Chen completed SEER* Stat Basics and Advanced Training at APHA. Chen was also one of the first DrPH Leadership students who received CPH certification.

# Georgia Southern Examines Georgia's Critical Access Hospital's

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Georgia's Critical Access Hospitals (CAH) are in crisis. Within the last 2 years, four CAHs have closed their doors due to failed financial and operational performance. Evidence points to the risk that several more are on the brink of closure. CAH closures have far-reaching impact on residents. Negative impacts include the extra distance that patients must travel to seek care, the displacement of health professionals and the unravelling of the entire fabric of the communities these hospitals serve. We hope to help participants understand the financial and operational challenges of CAHs, and to identify realistic strategies to enhance the resilience of these hospitals.

The Georgia Southern team worked with a cohort of CAHs across the state of Georgia to identify financial and operational best practices. Year 1 of this project focused on data collection, analysis and benchmarking. Year 2 is currently focused on performance improvement through Lean Six Sigma.

CAHs face financial constraints due to factors such as low volume, declining market share, unfavorable payer mix, challenges relating to collections, and difficulties in recruiting providers. CAHs in Georgia performed more poorly on the financial indicators assessed, in comparison to respective national medians. Many CAHs in our cohort are better organized to deal with crises – utilizing strong executive and bureaucratic structures – than to pursue ongoing improvement through employee empowerment and a process focus.

Improvements in the operational and financial management practices of Georgia's CAHs may significantly improve performance. Evidence-based strategies for operational and financial improvement are vital to sustainability. Opportunities exist for collaboration between public health systems and rural hospitals, including CAHs in assuring healthcare access for rural populations.

"Georgia's critical access hospitals: Financial performance and process improvement," was recently published in the Journal of the Georgia Public Health Association with Dr. William A. Mase, assistant professor of Health Policy and Management at the Jiann-Ping Hsu College of Public Health Georgia Southern University as the lead author. Drs. Bettye Apenteng, Linda Kimsey, Samuel Opoku, Charles Owens, and Stuart Tedders, from the Jiann-Ping Hsu College of Public Health were co-authors

# Georgia Southern Details a Sampling Scheme

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The article details a sampling scheme which can lead to a reduction in sample size and cost in clinical and epidemiological studies of association between a count outcome and risk factor. We show that inference in two common generalized linear models for count data, Poisson and negative binomial regression, is improved by using a ranked auxiliary covariate, which guides the sampling procedure. This type of sampling has typically been used to improve inference on a population mean. The novelty of the current work is its extension to log-linear models and derivations showing that the sampling technique results in an increase in information as compared to simple random sampling. Specifically, we show that under the proposed sampling strategy the maximum likelihood estimate of the risk factor's coefficient is improved through an increase in the Fisher's information. A simulation study is performed to compare the mean squared error, bias, variance, and power of the sampling routine with simple random sampling under various data-generating scenarios. We also illustrate the merits of the sampling scheme on a real data set from a clinical setting of males with chronic obstructive pulmonary disease.

Empirical results from the simulation study and data analysis coincide with the theoretical derivations, suggesting that a significant reduction in sample size, and hence study cost, can be realized while achieving the same precision as a simple random sample.

"Increased Fisher's information for parameters of association in count regression via extreme ranks," was recently published in Communications in Statistic – Theory and Methods.

Dr. Daniel F. Linder, Medical College of Georgia, was the lead author. Drs. Jingjing Yin, Haresh Rochani, Hani Samawi, Department of Biostatistics Jiann-Ping Hsu College of Public Health Georgia Southern University were co-authors.

# Georgia Southern Examines Physician Attitudes

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In the United States, human immunodeficiency virus (HIV) remains a substantial public health issue. There is evidence that the use of antiretroviral medications such as pre-exposure prophylaxis (PrEP) can be a safe and effective primary prevention strategy to reduce new cases of HIV infection. Provider practice behavior as it relates to prescribing PrEP and the potential impact on specific vulnerable populations needs increased attention. Few studies have evaluated the attitudes of physicians towards ethical issues related to prescribing PrEP.

The purpose of the present literature review was to evaluate provider attitudes toward the ethics of prescribing PrEP for individuals at risk of acquiring HIV infection. Searches of the PubMed and Cochrane databases were conducted. Three reviewers independently assessed the relevance of articles and discarded those not directly related to the attitudes of physicians toward ethics of the cost, safety, and resource allocation of PrEP. A total of twenty-one articles were included in the review.

Provider attitudes and perceptions focused on three areas: resource allocation, cost, and safety or effectiveness of PrEP. Providers who were hesitant in prescribing PrEP were concerned with the availability of resources, patient adherence, risk of drug resistance, and toxicity. In the studies reviewed, few providers had prescribed PrEP; however, prescribing practices trended upward with time and awareness.

Realization of the benefits of PrEP will require a utilitarian ethical approach to identifying the populations that will benefit most, monitoring for adverse effects, addressing costs, and educating and training providers to prescribe PrEP responsibly. Ensuring that PrEP fulfills its potential as part of a combination regimen for HIV prevention requires identification of additional evidence, education, support services, and resources that are needed, as well as the regulatory framework and cost scenarios for access to PrEP.

“Physician attitudes toward the ethics of pre-exposure prophylaxis (PrEP): Cost, safety, and resource allocation,” was recently published in the Journal of the Georgia Public Health Association.

Jiann-Ping Hsu College of Public Health Georgia Southern University faculty and student’s co-authored this paper with Mrs. Jessica Grippo Pavlick as the lead author. Dr. Stacy W. Smallwood, Ms. Katherine Pincura, Ms. Tamara Wright, and Dr. William A. Mase were co-authors.